

CLAIMS

What is Claimed is:

SJA

1 A method of admitting calls over a network, comprising:  
2 receiving a call request capable of affecting a network resource, the call  
3 request defining a throughput requirement;  
4 transmitting a throughput measurement request for the network resource;  
5 receiving a throughput measurement response including a throughput  
6 measurement corresponding to the network resource; and  
7 transmitting a call admission response when the throughput measurement  
8 at least substantially matches the throughput requirement of the call request

1 2. The method of claim 1, further comprising selecting one or more network  
2 resource as a resource candidate for use in the requested call.

1 3. The method of claim 1, wherein the selecting one or more network  
2 resource is based on the call admission response.

1 4. The method of claim 1, wherein the selecting one or more network  
2 resources is determined by usage policy of a policy server.

1 5. The method of claim 1, wherein the throughput requirement relates to a  
2 perceptible quality of service.

1 6. The method of claim 1, wherein the throughput requirement is specified in  
2 a packet header.

1           7.           The method of claim 1, wherein the throughput requirement complies with  
2 Resource Reservation Protocol (RSVP).

1           8.           The method of claim 1, wherein the throughput requirement complies with  
2 Diffserv Protocol.

1           9.           The method of claim 1, wherein the throughput requirement complies with  
2 MultiProtocol Label Switching (MPLS) Protocol.

1           10.          The method of claim 1, wherein the call request complies with Session  
2 Initiation Protocol.

1           11.          The method of claim 1, further comprising ranking the network resource  
2 according to a merit rating, the merit rating being based on the throughput measurement of the  
3 network resource.

1           12.          The method of claim 11, further comprising selecting resources according  
2 to the merit rating.

1           13.          The method of claim 1, further comprising monitoring usage of at least  
2 one of the network resources.

1           14.          The method of claim 1, wherein the throughput measurement request  
2 comprises at least one trace packet.

1           15.          The method of claim 1, wherein the throughput measurement request  
2 comprises a trace route.

1           16.          The method of claim 15, wherein the trace route comprises a list of  
2 network resources.

1           17.           The method of claim 16, further comprising the step of monitoring  
2 the network resources in the list to maintain the throughput requirement.

1           18.           The method of claim 1, further comprising selecting one or more sizes of a  
2 data packet as candidates for carrying audio data in the requested call.

1           19.           The method of claim 1, further comprising selecting an alternative  
2 resource as the network resource when the throughput measurement does not substantially match  
3 the throughput requirement of the call request.

1           20.           The method of claim 19, wherein the alternative resource comprises a  
2 switched telephone network.

1           21.           The method of claim 19, wherein the alternative resource comprises a  
2 dedicated communications link interconnecting network resources.

1           22.           The method of claim 1, further comprising transmitting an alternative  
2 resource call admission response when the throughput measurement does not substantially match  
3 the throughput requirement of the call request.

1           23.           The method of claim 1, further comprising determining a condition of the  
2 network resource.

1           24.           The method of claim 23, wherein the determining includes determining a  
2 delay in the throughput measurement in the network.

1           25.           The method of claim 23, wherein the determining includes determining a  
2 percentage of packet loss in the network.

1           26.           The method of claim 23, further comprising determining an expected  
2 quality of service based on the determined condition of the network resource.

1           27.           The method of claim 1, further comprising performing call admission  
2 control to accept or deny the call request.

1           28.           The method of claim 27, wherein performing call admission control is  
2 based on usage of a link in the network.

1           29.           The method of claim 27, wherein at least two terminals are defined in at  
2 least two communities coupled by a link in the network, and wherein performing call admission  
3 control includes performing call admission control based on a policy for the link between the  
4 communities.

1           30.           The method of claim 29, further comprising bypassing the call admission  
2 control within at least one community.

1           31.           The method of claim 1, wherein one of the call request, the throughput  
2 measurement, the throughput measurement request, the throughput measurement response and  
3 the call admission response is communicated over a data bus.

1           32.           An apparatus for admitting calls over a network, comprising:  
2                           a receiver for receiving a call request capable of affecting a network  
3 resource, the call request defining a throughput requirement;  
4                           a transmitter for transmitting a throughput measurement request for the  
5 network resource;  
6                           a receiver for receiving a throughput measurement response including a  
7 throughput measurement corresponding to the network resource; and  
8                           a transmitter for transmitting a call admission response when the

9 throughput measurement at least substantially matches the throughput requirement of the call  
10 request.

1 33. The apparatus of claim 32, further comprising a selector to select one or  
2 more network resource as a resource candidate for use in the requested call.

1 34. The apparatus of claim 33, wherein the selector is adapted to select one or  
2 more network resource based on the call admission response.

1 35. The apparatus of claim 33, wherein the selector is adapted to select one or  
2 more network resource based on a usage policy of a policy server.

1 36. The apparatus of claim 32, wherein the throughput requirement relates to a  
2 perceptible quality of service.

1 37. The apparatus of claim 32, wherein the throughput requirement is  
2 specified in a packet header.

1 38. The apparatus of claim 32, wherein the throughput requirement complies  
2 with Resource Reservation Protocol (RSVP).

1 39. The apparatus of claim 32, wherein the throughput requirement complies  
2 with Diffserv Protocol.

1 40. The apparatus of claim 32, wherein the throughput requirement complies  
2 with MultiProtocol Label Switching (MPLS) Protocol.

1 41. The apparatus of claim 32, wherein the call request complies with Session  
2 Initiation Protocol.

1           42.           The apparatus of claim 32, further comprising a controller adapted to rank  
2 the network resource according to a merit rating, the merit rating being based on the throughput  
3 measurement of the network resource.

1           43.           The apparatus of claim 42, further comprising a selector to select the  
2 network resource according to the merit rating.

1           44.           The apparatus of claim 32, further comprising a monitor for monitoring  
2 usage of at least one network resource.

1           45.           The apparatus of claim 32, wherein the throughput measurement request  
2 comprises at least one trace packet.

1           46.           The apparatus of claim 32, wherein the throughput measurement request  
2 comprises a trace route.

1           47.           The apparatus of claim 32, further comprising a selector for selecting one  
2 or more sizes of a data packet as candidates for carrying audio data in the requested call.

1           48.           The apparatus of claim 32, further comprising a selector for selecting an  
2 alternative resource as the network resource when the throughput measurement does not  
3 substantially match the throughput requirement of the call request.

1           49.           The apparatus of claim 48, wherein the alternative resource comprises a  
2 switched telephone network.

1           50.           The apparatus of claim 48, wherein the alternative resource comprises a  
2 dedicated communications link interconnecting network resources.

1           51.           The apparatus of claim 32, further comprising a transmitter for  
2 transmitting an alternative resource call admission response when the throughput measurement  
3 does not substantially match the throughput requirement of the call request.

1           52.           The apparatus of claim 32, further comprising a controller adapted to  
2 determine a condition of the network resource.

1           53.           The apparatus of claim 52, wherein the controller adapted to determine a  
2 condition of the network resource is further adapted to determine a delay in the throughput  
3 measurement.

1           54.           The apparatus of claim 52, wherein the controller adapted to determine a  
2 condition of the network resource is further adapted to determine a percentage of packet loss in  
3 the network.

1           55.           The apparatus of claim 52, wherein the controller adapted to determine a  
2 condition of the network resource is further adapted to determine an expected quality of service  
3 based on the determined condition of the network resource.

1           56.           The apparatus of claim 32, further comprising a call admission control  
2 device for accepting or denying the call request.

1           57.           The apparatus of claim 56, wherein the call admission control device is  
2 adapted to admit the call based on usage of a link in the network.

1           58.           The apparatus of claim 56, wherein at least two terminals are defined in at  
2 least two communities coupled by a link in the network, and wherein the call admission control  
3 device performs call admission control based on a policy for the link between the communities.

1           59.           The apparatus of claim 58, further comprising a bypass path for bypassing  
2 the call admission control device within at least one community.

1           60.           The apparatus of claim 32, wherein one of the call request, the throughput  
2 measurement, the throughput measurement request, the throughput measurement response and  
3 the call admission response is communicated over a data bus.

4           61.           An article including one or more machine-readable storage media  
5 containing instructions to manage calls within a telephony system, the instructions when  
6 executed causing a controller to:

7                       receive a call request capable of affecting a network resource, the call  
8 request defining a throughput requirement;

9                       transmit a throughput measurement request for the network resource;

10                      receive a throughput measurement response including a throughput  
11 measurement corresponding to the network resource; and

12                      transmit a call admission response when the throughput measurement at  
13 least substantially matches the throughput requirement of the call request.

1           62.           A call establishment method comprising:

2                       transmitting a call request capable of affecting a network resource, the call  
3 request defining a throughput requirement;

4                       receiving a throughput measurement request for the network resource;

5                       transmitting a throughput measurement response including a throughput  
6 measurement for the network resource; and



7 receiving a call admission response when the throughput measurement at  
8 least substantially matches the throughput requirement of the call request

1 63. A call server comprising:

2 means for receiving a call request capable of affecting a network resource,  
3 the call request defining a throughput requirement;

4 means for transmitting a throughput measurement request for the network  
5 resource;

6 means for receiving a throughput measurement response including a  
7 throughput measurement corresponding to the network resource; and

8 means for transmitting a call admission response when the throughput  
9 measurement at least substantially matches the throughput requirement of the call request.